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| 09/673,555 | 02/13/2001 | Jacques Benveniste | 9320.113USWO | 8541 |

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MERCHANT & GOULD PC
P.O. BOX 2903
MINNEAPOLIS, MN 55402-0903

EXAMINER

CHUNDURU, SURYAPRABHA

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

1656

DATE MAILED: 12/19/2001

12

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/673.555

Applicant(s)

BENVENISTE ET AL.

Examiner

Suryaprabha Chunduru

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 October 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-72 is/are pending in the application.
- 4a) Of the above claim(s) 24-41 and 65-68 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23, 42-64 and 69-72 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other

DETAILED ACTION

1. The Preliminary Amendment (Paper No. 7) filed on February 6, 2001 has been entered and considered.
2. The response to lack of unity (Paper No. 12) filed on October 9, 2001 has been entered. Applicant's election of Group I in Paper No. 12 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
3. The disclosure is objected because of the following informalities:

Specification

- a. The following guidelines illustrate the preferred layout and content for patent applications. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

The following order or arrangement is preferred in framing the specification and, except for the reference to the drawings, each of the lettered items should appear in upper case, without underling or bold type, as section headings. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

- (a) Title of the Invention.
- (b) Cross-Reference to Related Applications.
- (c) Statement Regarding Federally Sponsored Research or Development.
- (d) Reference to a "Sequence Listing," a table, or a computer program listing appendix submitted on compact disc (see 37 CFR 1.52(e)(5)).
- (e) Background of the Invention.
 1. Field of the Invention.
 2. Description of the Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (f) Brief Summary of the Invention.
- (g) Brief Description of the Several Views of the Drawing(s).
- (h) Detailed Description of the Invention.
- (i) Claim or Claims (commencing on a separate sheet).
- (j) Abstract of the Disclosure (commencing on a separate sheet).
- (k) Drawings.
- (l) Sequence Listing, if on paper (see 37 CFR 1.821-1.825).

b. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

a) Claims 1-23, 32-35, 42-64, and 69-70 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claims are confusing for referring to the subject matter in the term "and/or". Thus it is unclear how the claims can simultaneously encompass all of these limitations. The claims should refer to the subject matter in the alternative only, the replacement of the term "and/or " with " or " or the addition of dependent claims are suggested.

b) Claim 28 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 28 incomplete and indefinite for being dependent on cancelled claim 24.

c) Claims 1-23 and claims 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 1 recites "a reaction" which is confusing and unclear as what the term a reaction refers to because a reaction could be chemical, physical, biochemical. Claim 32 is confusing and indefinite for reciting the phrase "process including the stages" because method claims includes steps. Amendment of these claims to replace "stages" with steps would obviate this rejection.

d) Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential elements, such omission amounting to a gap between the elements. See MPEP § 2172.01.

Method claims require a last step or phrase in the last step that states the accomplishment of the goals for the method, which were stated in the method's preamble. Claim 1 lack such a last step (how amplifying a reaction is identified) and is confusing because the additional method step is not sufficiently set forth. While minute details are not required in method claims, at least the basic steps must be recited in a positive, active fashion. See Ex parte Erlich, 3 USPQ2d1011, p.1011 (Bd. Pat. App. Int. 1986). It is suggested that an amended claim more clearly describing the intended steps be submitted.

e) Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claims recite "amplifying / amplification process" which is confusing and unclear as what the term amplifying refers to because an amplification could be polymerase chain reaction or multiplication of cells by cell division, replication. Therefore, the metes and bounds of the claims are unclear. It is suggested an amendment of the claims more clearly describing the amplification be submitted.

f) Claims 32-35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 32 recites subject matter in parenthesis which is confusing and indefinite as whether the subject matter is a part of the claim or it indicates the description of the claim language.

g) Claims 1-23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claims recite a phrase "electromagnetic signal characteristic of the biological activity" which is confusing and unclear as what the phrase refers to because any light or florescence spectrum releases electromagnetic signal and it is not clear how a signal be characteristic of biological activity, an absorbance reading of a biological or a chemical reaction by spectrophotometer could be an electromagnetic signal. The definition for this phrase in the specification is indefinite and reads on any photochemical reaction. Therefore, the metes and bounds of the claims are unclear.

h) Claims 32-35, 42-64 and 69-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 32 recites "particularly" which is confusing and unclear as what the term particularly refers to because the recitation of the term "particularly" is unclear whether any of the limitations which follow the term particularly are required limitations or not. Therefore, the metes and bounds of the claims are unclear.

i) Claims 32-35, 42-64 and 69-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The instant claims recite "parasitic fields", "possibly" "previously exposed to" which are confusing and unclear as what the terms particularly refer to because the recitation of these terms is unclear whether any of the limitations which follow the term(s) are required limitations or not. Therefore, the metes and bounds of the claims are unclear.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

a. Claims 1-23, 28-31 are rejected under 35 U.S.C. 102(a) as being anticipated by Benveniste et al. (FASEB J., March 17, vol. 12(4); pp A412, 1998).

Benveniste et al. teach a method to detect electromagnetic signal of biological systems wherein Benveniste et al. disclose that the method comprises bringing into contact ligand (agonist) with receptor (target cell), applying electromagnetic signals and detecting the electromagnetic emission of specific hertzian waves emitted by these pair of molecules and detecting the signal(s) by digitally recording on a multimedia computer, as an indication of biological activity (see A412, column 1, abstract 2392). Further Benveniste disclose that this method can be applied to biology and medicine (see abstract 2392). Thus the disclosure of Benveniste et al. meets the limitations in the instant claims.

b. Claims 1-23, 28-35 and 42-64, 69-72 are rejected under 35 U.S.C. 102(b) as being anticipated by Benveniste et al. (J Allergy Clin Immunol., vol. 99 (1), part 2, pp S175, 1997).

Benveniste et al. teach a method of digitally amplifying electromagnetic signal of biological molecules wherein Benveniste et al. disclose that the method comprises bringing into contact ligand (agonist) with receptor (target cell), applying electromagnetic signals in a solvent

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(water) to detect molecular activity (see page S175, column 1, abstract 705). Further, Benveniste et al. disclose recording digital 22kHz (kilo hertz) by a transducer and computer with soundcard (see page S175, column 1, abstract 705); the method can be applied to chemistry, biology and medicine. Thus the disclosure of Benveniste et al. meets the limitations in the instant claims.

c. Claims 1-23, are rejected under 35 U.S.C. 102(b) as being anticipated by Hollis et al. (USPN. 5,653,939).

Hollis et al. teach a method for identifying molecular structures (includes ligand-receptor, antigen-antibody, DNA-probe) wherein Hollis et al. teaches contacting a probe with target site facilitating binding of probe to the target to form a binding complex, applying electrical or optical signals to the test sites, and detecting signals associated with the molecular structures (see column 1, lines 18-25, column 2, lines 30-38 and 59-67). Further, Hollis et al. discloses that (i) the method includes electromagnetic wave detector to detect the test sites bonded target-probe pairs based on resonant frequencies (see column 8, lines 32-57); (ii) the method can be used in detecting antigen-antibody binding (see column 18, lines 3-26 and table III). Thus, the disclosure of Hollis et al. meets the limitations in the instant claims.

d. Claims 1-23, are rejected under 35 U.S.C. 102(e) as being anticipated by Gold et al. (USPN. 6,242,246).

Gold et al. teach a method for the detection of a target molecule binding to nucleic acid ligand using fluorescence methods wherein Gold et al. disclose that the method comprises contacting protein target molecules with labeled nucleic acid ligands on the surface of a biochip and detecting the signal generated by the said target –ligand binding through a signal-amplifying hybridization cascade (see column 10, lines 33-67, column 11, lines 1-21, and column 14, lines

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26-57). Further Gold et al. disclose the detection of the signal could be carried out using surface plasma resonance wherein resonance is measured using biosensors (see column 18, lines 9-41).

Thus the disclosure of Gold et al. meets the limitations in the instant claims.


No claims are allowable.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Suryaprabha Chunduru whose telephone number is 703-305-1004. The examiner can normally be reached on 8.30A.M. - 4.30P.M. Mon - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones can be reached on 703-308-1152. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-0294 for regular communications and - for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0196.


Suryaprabha Chunduru
December 10, 2001


JEFFREY FREDMAN
PRIMARY EXAMINER